

## Dynatherm Surface Heating Systems For Your Home – The Advantages at a Glance:

- \* Electrical energy is converted into radiant heat (almost 100%) in the room – no heat loss in pipes
- \* No costs incurred for servicing or the chimney sweep; this is a huge saving when compared to conventional heating
- \* No wear or corrosion, no maintenance necessary
- \* Customized planning – the heat output is chosen specifically for the room in question
- \* Can be combined with an existing heating system
- \* Room thermostats make it easy to regulate the temperature
- \* Cosy warmth, especially suited to allergy sufferers – no overly dry heated air
- \* A pleasant indoor atmosphere that also helps avoid mould growth
- \* Particularly suitable for special applications such as animal enclosures, aquariums, terrariums etc.
- \* Ideal for use in rooms not permanently in use i.e. holiday homes, the guest room, hobby room etc.
- \* Suitable for all types of common flooring

**YOUR INFRARED SPECIALIST:**

Dynatherm Flächenheizsysteme GmbH is a Germany company well-established in the field of infrared heating systems for almost 20 years now. In 1988 the company developed a completely new type of heating foil with a fringe pattern and double thermistor. By implementing new production technology, environmental stress is reduced to a minimum. This innovative processing technology has enabled us to expand the output range – 100 W to 3.000 W per m<sup>2</sup> can now be achieved using 230 V/240 V.

Our heating foil has excellent material properties and is highly versatile. We have continued to develop and modify it to meet the demands of modern technology. We are constantly on the lookout for new applications and how to open up these fields. Our manufacturing team consists of 15 trained specialists all of whom are highly motivated and thanks to whom we can guarantee high quality and proudly boast that Dynatherm products are "Made in Germany". Thanks to the commitment of our team, we are able to offer a perfect finish – even at short notice.

Elmar König (Dipl. Ing.)  
Managing Director



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Our products have been awarded the German GS Mark ("Tested for safety") by TÜV Nord



# Infrared Heating For Your Home

**Dynatherm Surface Heating Systems**



**Heat your home using one of Dynatherm's Surface Heating Systems and follow nature's example. This alternative technology makes use of infrared heat to heat your house, your flat or rooms not in permanent use and you are no longer dependent on oil or gas. Infrared heating is considerably cheaper to install and operate than a conventional system and, in addition to saving money you can enjoy a healthy and pleasant indoor atmosphere.**

**A comparison of annual operating costs\***

	Oil or gas-fired heating	Infrared panel heating
Electricity costs for burner, fan motor, pumps	approx. € 150	€ 0
Servicing, maintenance/adjustment necessary to meet emission values	approx. € 125	€ 0
Maintenance costs (approx. € 1,500 for 10 years)	approx. € 150	€ 0
Chimney sweep a) to monitor emission values b) to sweep	approx. € 75	€ 0
<b>Total:</b>	<b>approx. € 500</b>	<b>€ 0</b>

**A comparison of annual consumption costs\***

	Oil-fired central heating	Gas-fired central heating	Infrared panel heating
Detached house floorage approx. 120 m <sup>2</sup>			
Low-energy house (KfW 40 * <sup>1</sup> )	approx. € 420	approx. € 460	approx. € 520
House built after 1995 acc. to Thermal Insulation Regulations * <sup>2</sup>	approx. € 790	approx. € 830	approx. € 960
Old building, insulated before 1995	approx. € 1,120	approx. € 1,300	approx. € 1,450

**A comparison of investment costs for heating**

	Oil-fired	Gas-fired	Infrared panel
<b>Total:</b>	<b>approx. € 12,000</b>	<b>approx. € 10,200</b>	<b>approx. € 6,500</b>

\* Figures relate to Germany

\*<sup>1</sup> A house designed to use 60% less energy than a standard house (KfW 100) which means yearly primary energy requirement of max. 30 kWh/m<sup>2</sup>

\*<sup>2</sup> German regulations

**Consumption costs:**

The costs referred to are average values which can of course vary depending on how the residents heat.

**Operating costs:**

From an economic point of view, infrared heating systems have the edge over contemporary systems. Firstly, no costs are incurred for servicing, maintenance, electricity supply for a burner or pumps and there is nothing for a chimney sweep to do. Secondly, the consumer is no longer dependent on oil or gas, commodities that continue to increase in price.

**Electric Heating?!**

Electric heating is considered expensive and energy-consuming; this is because most of our electricity is generated in gas or coal-fired power stations or in nuclear power plants. However, it is worth taking more than just a cursory glance and scrutinizing conventional types of heating.

With oil or gas-fired heating, fuel is burnt to heat water in the system. This warm water is stored or rather flows through pipes leading to radiators or in the case of underfloor heating it flows through a pipe system located directly beneath the floor; the idea being that the warmth from the water will heat the ambient air. However, a considerable amount of heat is actually already lost in the pipes.

Dynatherm Heating Panels take the direct approach. A coated foil converts electric energy into infrared radiant heat – exactly where you would like it. The heating foil can be integrated into metal, glass or marble panels. All you need is a socket.



**A Healthy Indoor Atmosphere Be flexible and heat efficiently in all living areas!**

Dynatherm Heating Panels do not heat the wall they are fitted to – instead they radiate heat into the room taking advantage of the fact that people and objects are able to absorb and radiate heat. This means the warmth is immediately felt; the ambient air does not have to heat up first. We are familiar with this pleasant type of warmth – it's how we feel the warmth of the sun or the heat from infrared lamps often used for medical purposes.

When contemporary heating systems heat up the air, it begins to circulate and whirls up dust and pollen which can make life very unpleasant for allergy sufferers. Dynatherm Heating Panels cause hardly any air movement. Radiant heat feels warmer than it actually is – the room temperature is felt to be 4 - 6°C warmer. This means a room can be pleasantly warm and yet the ambient air still has sufficient moisture. There is no need for a humidifier!

Dynatherm Heating Panels create a perfect thermal indoor atmosphere and provide excellent heat distribution. The temperature of the air in the room is consistent; at shoulder height it is slightly lower than at floor level.



**Installation and Operation**

Dynatherm Heating Panels are ideal for heating rooms not in permanent use, e.g. work or hobby rooms or the guest room. They are versatile and can even be used when the hot water system is switched off. This means you can shorten the winter heating period and save money!

Dynatherm Heating Panels can be installed as standing units but can also easily be fitted to the wall. The size of the unit is specifically chosen to suit the room in question – the output ranges from 100 W to 1000 W per unit. The position of the room (in the centre of the house, outside walls etc.) and how well it is insulated are factors that determine the heat output required – typically this will be between 30 W and 80 W per square metre (m<sup>2</sup>).

Depending on the size of the room electricity costs will be approximately € 0.02 - € 0.20 per hour for a heat output of 100 W to 1000 W. A thermostat with a timer guarantees that electricity is only used when heat needs to be generated.

**Dynatherm Marble or Metal Panels... timeless... tasteful!**

**Metal Radiator Panels** designed to heat the room quickly, available in the following colours:

- white RAL 9016
- brown red RAL 3011
- light moss green RAL 6005
- anthracite grey RAL 7016
- sand yellow RAL 1002

**Marble Slab Panels** able to store heat for a long time and renowned for temperature stability, available

in standard marble slab or Volakas White (grey veined)